



USMC Marine Personnel Carrier

Industry Day Requirements Information Brief 24 April 2007



LtCol Kurt Koch
Fires and Maneuver Integration Division
Capabilities Development Directorate
Marine Corps Combat Development Command
Quantico, Virginia

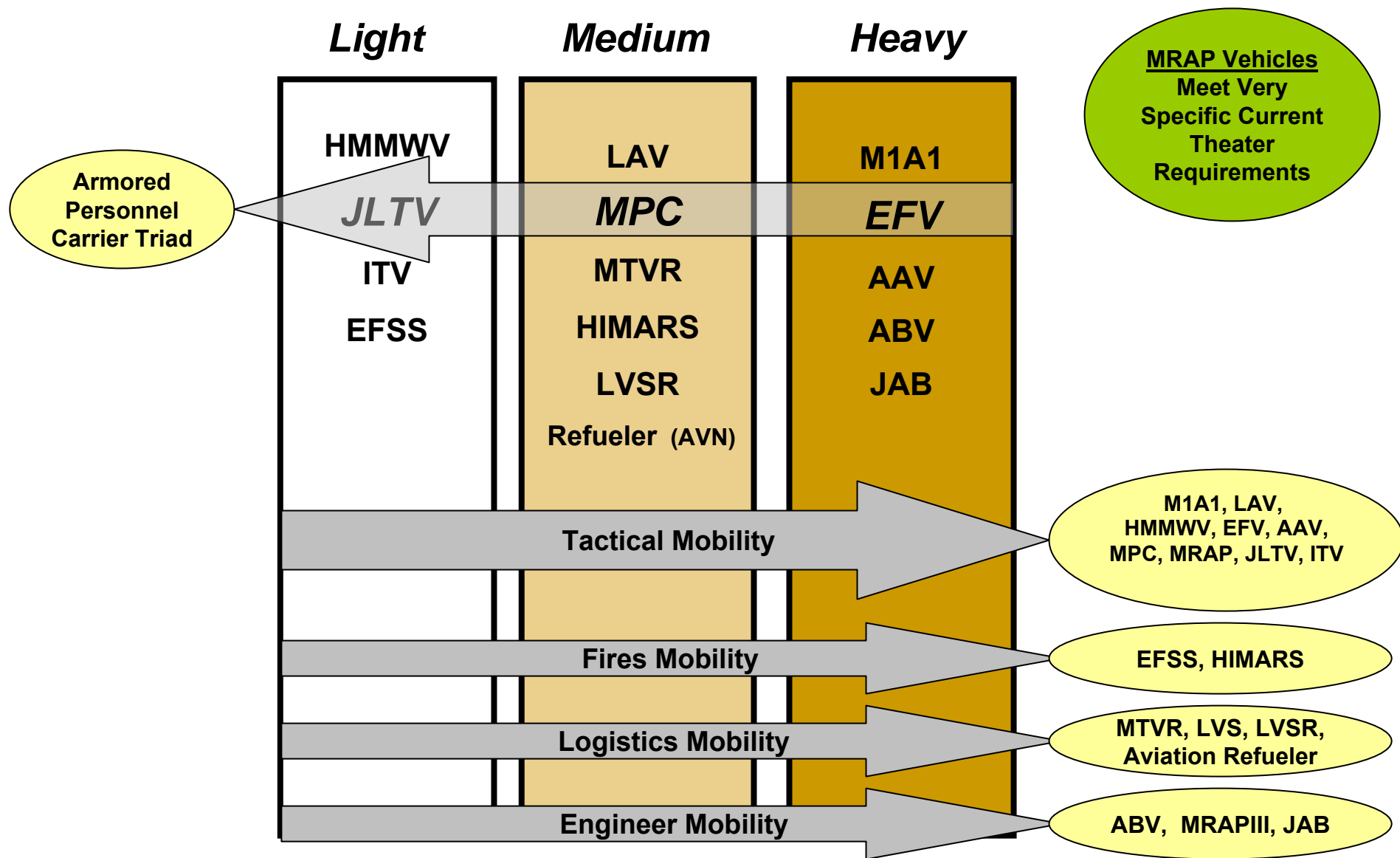


Purpose

- Information brief consisting of:
 - Overview of Ground Tactical Mobility Portfolio
 - Requirements development for the portfolio's medium capability category-Marine Personnel Carrier (MPC)
 - MPC Attributes



USMC Ground Tactical Mobility Portfolio





Ground Combat Tactical Mobility Portfolio



Expeditionary Fighting Vehicle (EFV)

- Acquisition Objective: 573
 - Preserves single 2 MEB forcible entry capability and supports 8 $\frac{1}{3}$ Inf Bns lift
-

Marine Personnel Carrier (MPC)

MPC

- Acquisition Objective: ~ 600
 - Restores 3 Inf Bns of lift lost in EFV reduction to 573 and supports balanced capabilities
-

Joint Light Tactical Vehicle (JLTV)

JLTV

- Acquisition Objective: Increment 1 = 5,500; Total AO = ~ 14,000
 - Provides requisite force protection / survivability / mobility to GCE (globally source MCO)
-



Internally Transportable Vehicle (ITV)

- Acquisition Objective: 699
 - Supports DO Concept of Operations
-



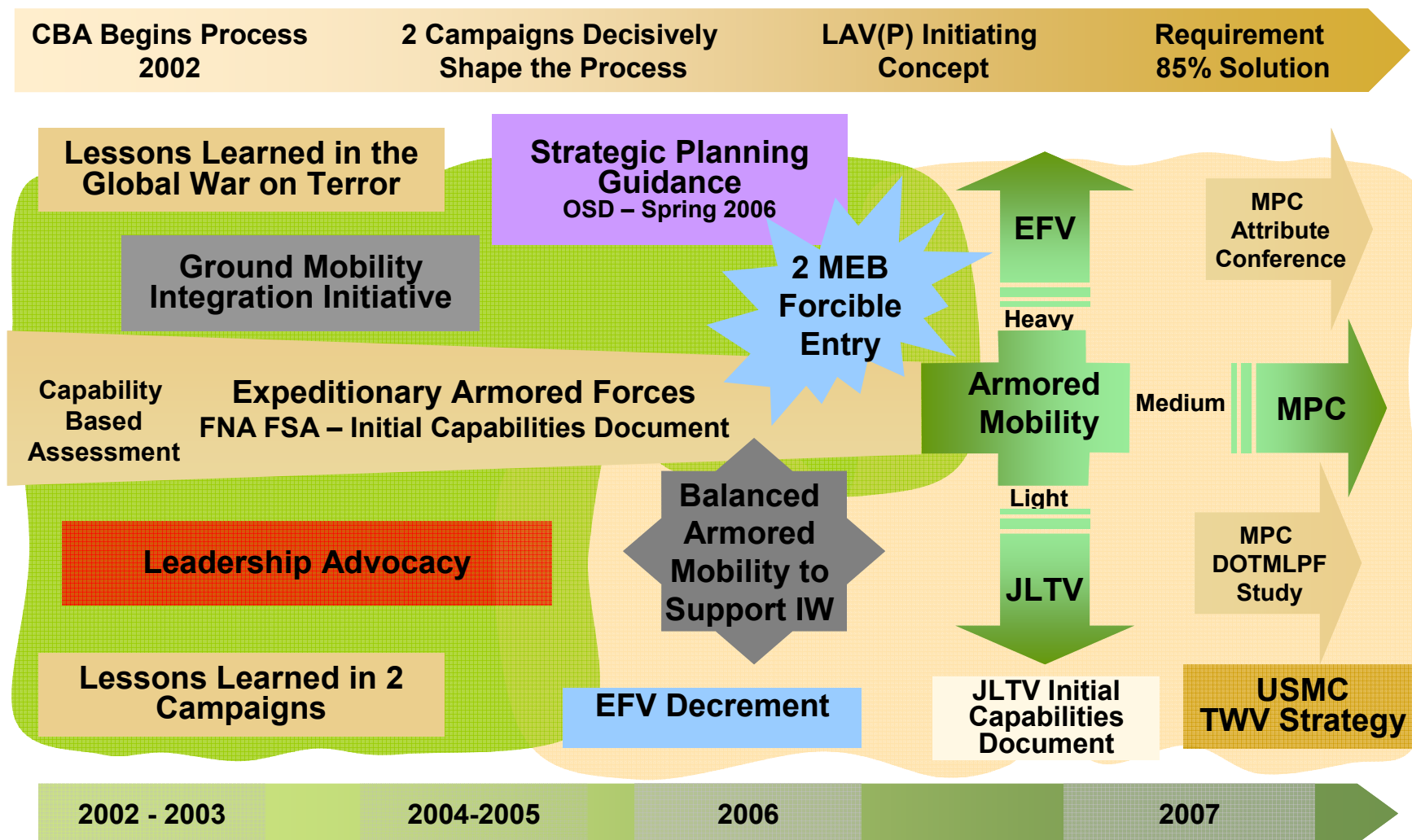
Mine Resistant Ambush Protected (MRAP) Vehicle

- Acquisition Objective: 3,700
- Theater specific rqmt; supports 6 Inf Bns + 2 MEU BLTs + Surge Capacity + Spt Etab



MPC – Requirements Development

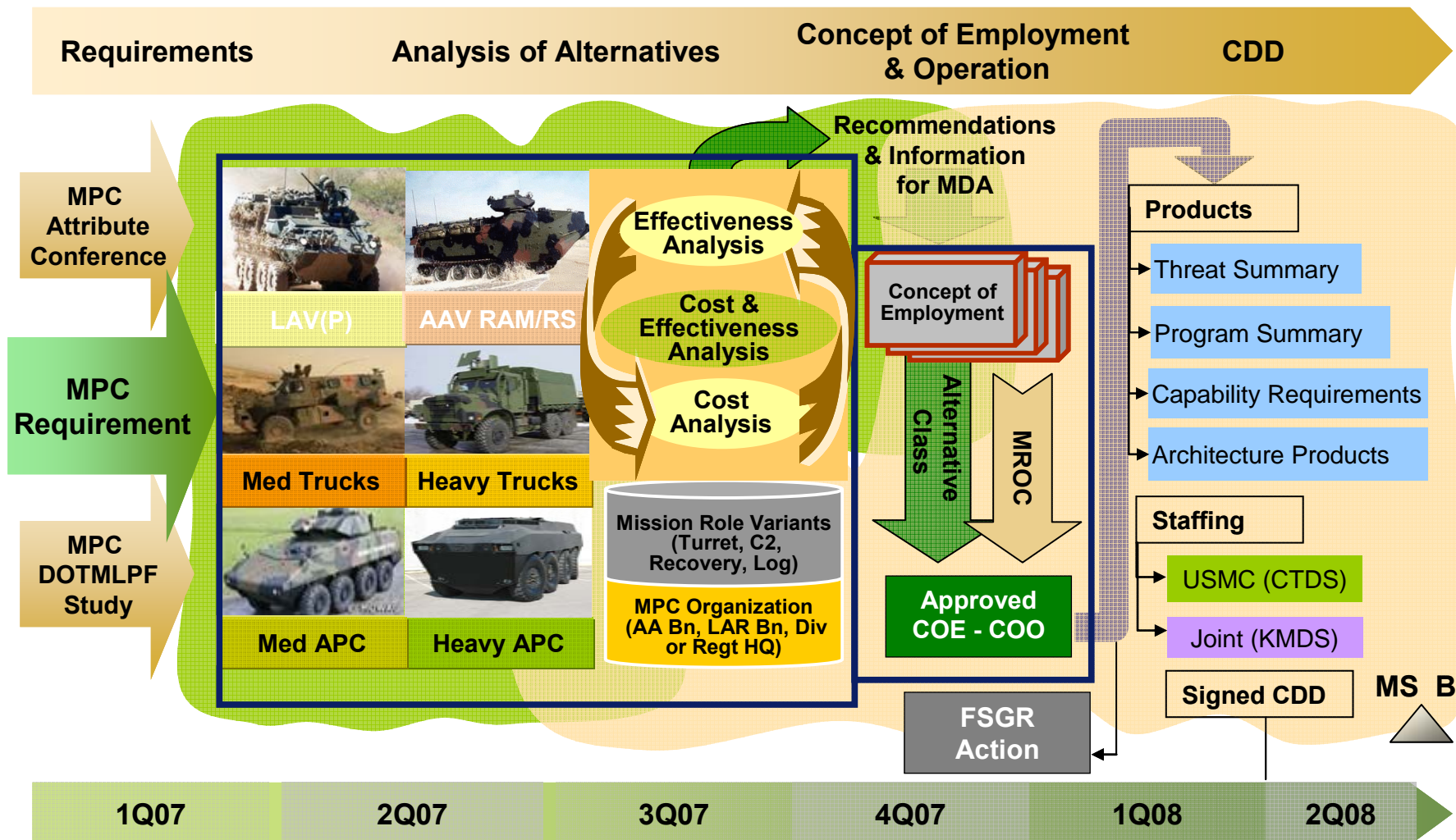
Requirements Development Process for a New Capability





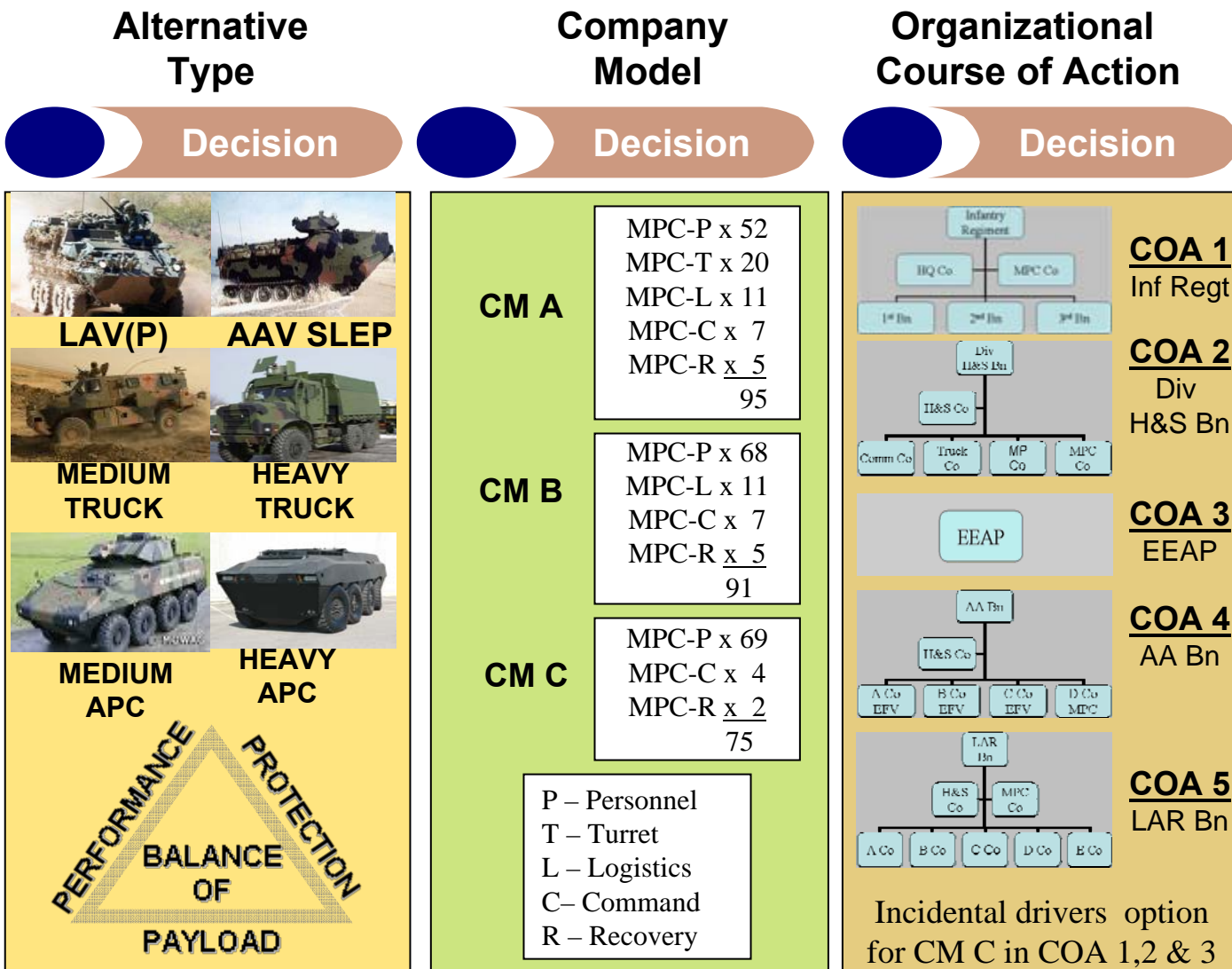
MPC – Requirements Development

Requirements Development Process for a New Capability





MPC - Concept of Employment



Incidental drivers option
for CM C in COA 1,2 & 3



Ground Combat Tactical Vehicle Development

The Iron Triangle

PERFORMANCE

- Mobility
 - Operate in all environments
 - Complex urban environments
 - Tight mountainous terrain
 - Soft soil operations
 - Fast enough to:
 - Overtake convoy
 - Pursue enemy
 - Combat sprint
 - >JLTV
- Transportability
 - Maritime Pre-position Ship Compatible
 - C-130/C-17 Air liftable
- Commonality Among Variants
 - Modular/Plug-and-Play

PERFORMANCE

PROTECTION

PROTECTION

- A Quantum Leap over Current Armor Protection
- Focus on Occupant, not Necessarily Vehicle, Survivability
- 360° Spherical and Internal Protection
 - Side & Underbelly IED
 - Blast/fragmentation
 - EFP/Shape charge
 - Overhead blast
 - Small arms
 - RPG
 - Fire
 - Roll-over

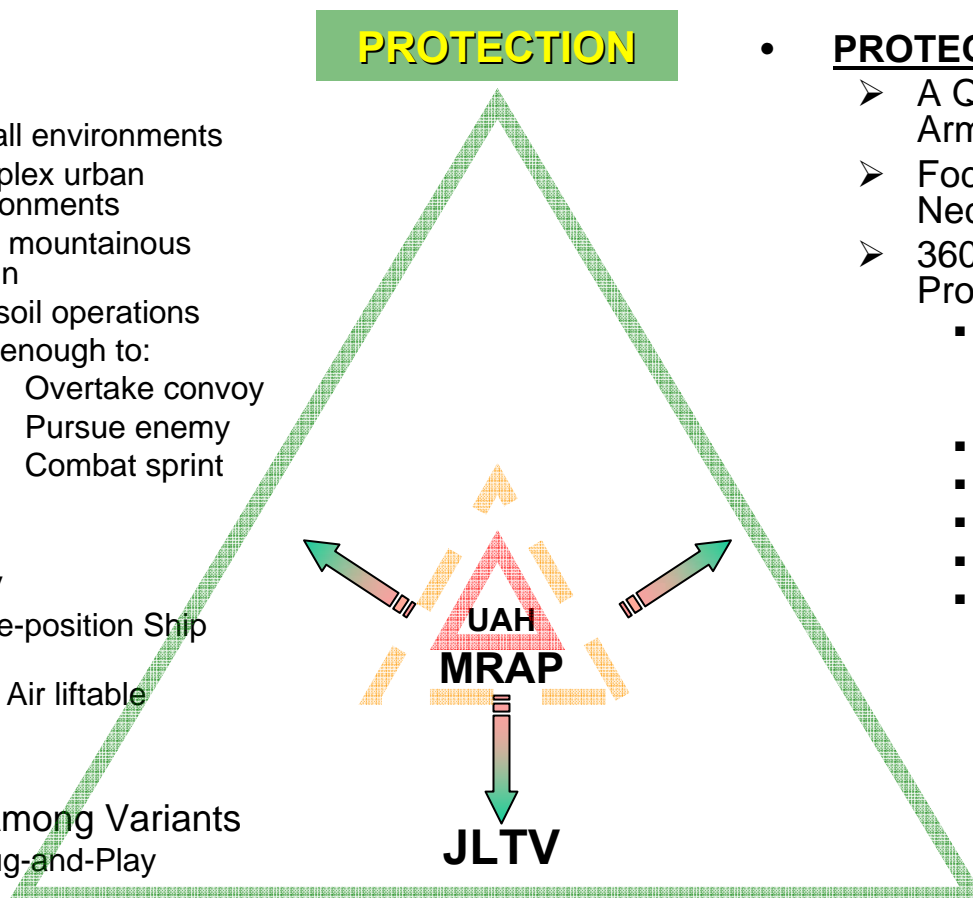
PAYLOAD

- >JLTV

PAYLOAD

PRODUCTION CAPABILITY

- High Capacity
- Surge





MPC Attributes-KPP

MPC BASE VEHICLE ATTRIBUTES AND METRICS				
Attribute	Measure	Most Stressful Condition	Metric (TH)	Metric (O)
1. Operational Mobility (KPP 1)	Average Speed and range required for mission accomplishment under the most stressful conditions accounting for terrain, environment, distance without refueling.	10% primary; 20% secondary; 30% trail; 40% cross country “	1.Primary Road 60 mph 2.Cross Country 20 mph 3.300 mile (483 km) Range	1.Primary Road >60 mph 2.Cross Country 30 mph 3.500 mile (805 km) Range
2. Tactical Mobility (KPP 2)	1.Negotiate a vertical obstacle height 2.Climb slope; Traverse slope 3.Turning radius	Vertical step, side slope, turning radius, etc	1.1.5 feet (0.46m) 2.Threshold = Objective 3.Turning radius 60 ft	1.2.0 feet (0.61m) 2.60 % slope; traverse a 30 % side slope 3.Pivot
11. Personnel (KPP 3)	Number of passengers with fighting equipment to accomplish mission	1.Travel distance: 110nm 75% cross country/25% road 2.High heat conditions 3.Extreme cold conds.	1. 9 PAX with existence load not including crew 2. T=O	1. 12 PAX with existence load not including crew 2. Internal Climate Control
19. Defend Against Kinetic (IED/Mines) (MKPP 4)	Defend against specific STANAG level threats. Threats refer to the ability to survive hits from kinetic threats. Refer to classified annex	Urban environment during high threat, IW operations	STANAG 3a/3b IAC 3 (IED)	STANAG 4a/4b IAC 4 (IED)



MPC Attributes-KPP

MPC BASE VEHICLE ATTRIBUTES AND METRICS				
Attribute	Measure	Most Stressful Condition	Metric (TH)	Metric (O)
20. Defend Against Kinetic (Ballistic/Chemical) (MKPP 5)	Defend against specific STANAG level threats	Urban environment during high threat, IW operations	1.KE Threat - STANAG 4 2.RPG Threat Passive Protection System	1.KE Threat - STANAG 5 2. RPG Threat Active Protection System
27. Availability (MKPP 6)	Operational Availability (in percent) (based on assumed administrative and logistics delay time of 17 hours per operational mission failure)	High operational tempo	85%	90%
37. Net Ready (MKPP 7)	C4ISR <i>voice</i> command and control systems interoperability	All	Threshold= Objective	Operating forces as well as inter-unit (higher adjacent supporting)
40. Net Ready (MKPP 8)	C4ISR <i>data</i> command and control systems interoperability	All	T=O	Operating forces as well as inter-unit (higher adjacent supporting)



Summary

- Balancing Capabilities:
 - Forcible Entry (2 x MEB)
 - Irregular Warfare & MCO Capability Sets
- JLTV and MPC initiatives are the appropriate combat vehicles to support IW, MCO and JFEO.
- EFV program resource reinvestment to support JLTV and MPC is required to achieve SPG.
- MRAP vehicles provide survivability bridge to JLTV & MPC and meet current theater requirements.